

# Water Commissioners and Water Measurement

Title 85-5  
Montana Code Annotated

Philipsburg  
January 10, 2018

Mike Roberts, Hydrologist  
Department of Natural Resources  
and Conservation (DNRC)





An aerial photograph of a mountain valley. In the foreground, there are large, flat agricultural fields in shades of brown and tan, with some green patches. A river or stream flows through the valley. In the background, there are rolling mountains under a clear blue sky. The text is overlaid on the left side of the image.

**Water Commissioner/District Court:  
Duties and Responsibilities**

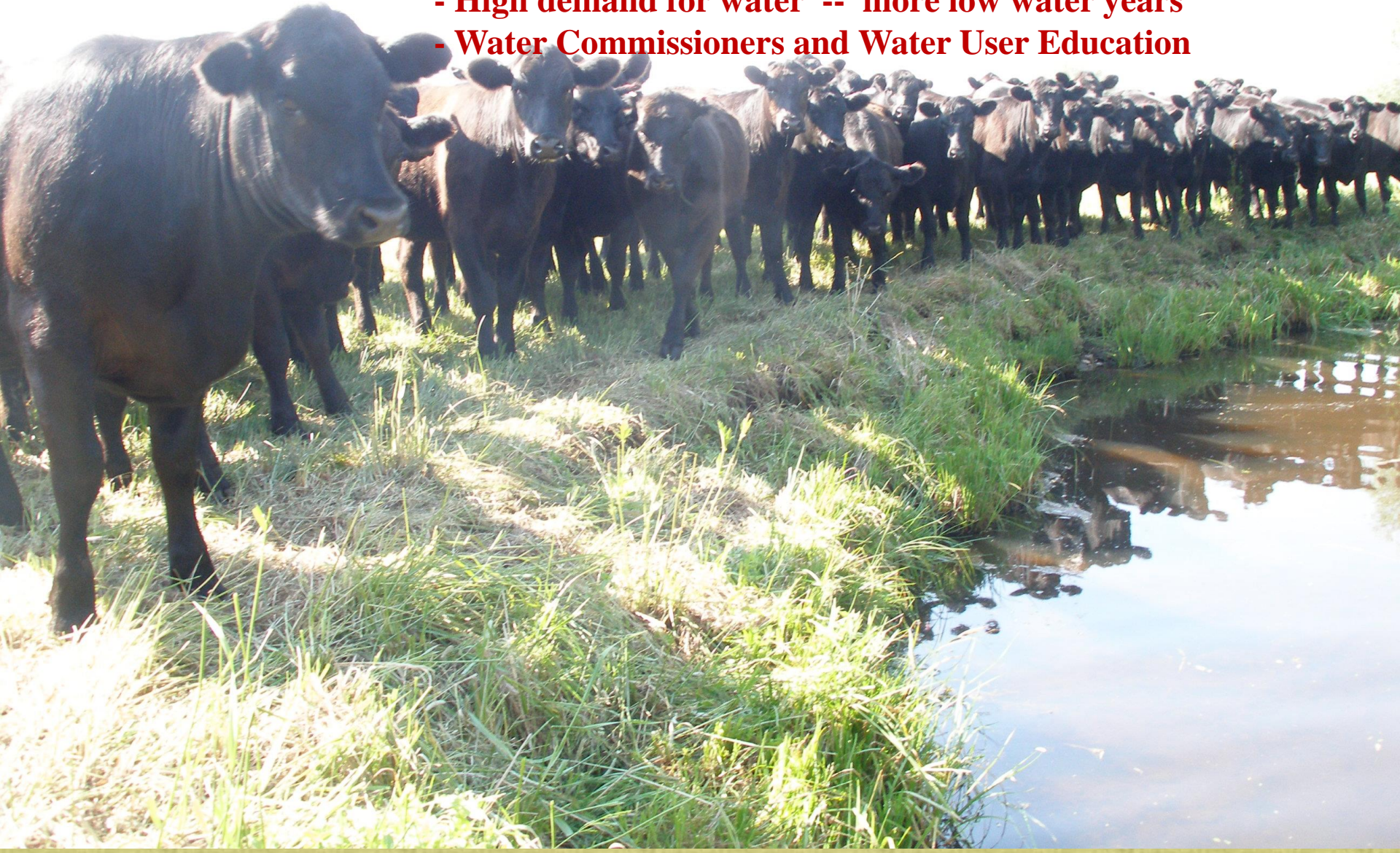
**Water User's: Expectations/Responsibilities**

**Water Measurement**



# Why are we talking about Water Commissioners?

- Water Court, District Courts, and DNRC have responsibilities
- More decrees being issued -- more commissioners
- High demand for water -- more low water years
- Water Commissioners and Water User Education





# What is a Water Commissioner?



An appointee of the District Court responsible for the measurement and delivery of water based upon the priority of water rights for a specific stream, ditch, reservoir, or other watercourse.



# Ditch Rider? Dam Tender? Water Commissioner? Mediator?

**MCA 85-5-101** Applies to any stream, ditch, watercourse, spring, lake, reservoir, or other source of supply which has been determined by a decree of a court of competent jurisdiction (including temporary preliminary, preliminary, and final decrees).





# How do Water Commissioners Enforce Decrees?



**Distribute by Priority**



**Adjust  
Headgates**

**and**

**Record  
Flow Rate  
from  
Measuring Devices**



# Why are Water Commissioners important?

- Distribute water according to law
- Protect all water users from illegal diversions
- Front lines of water management





# Who are these guys?



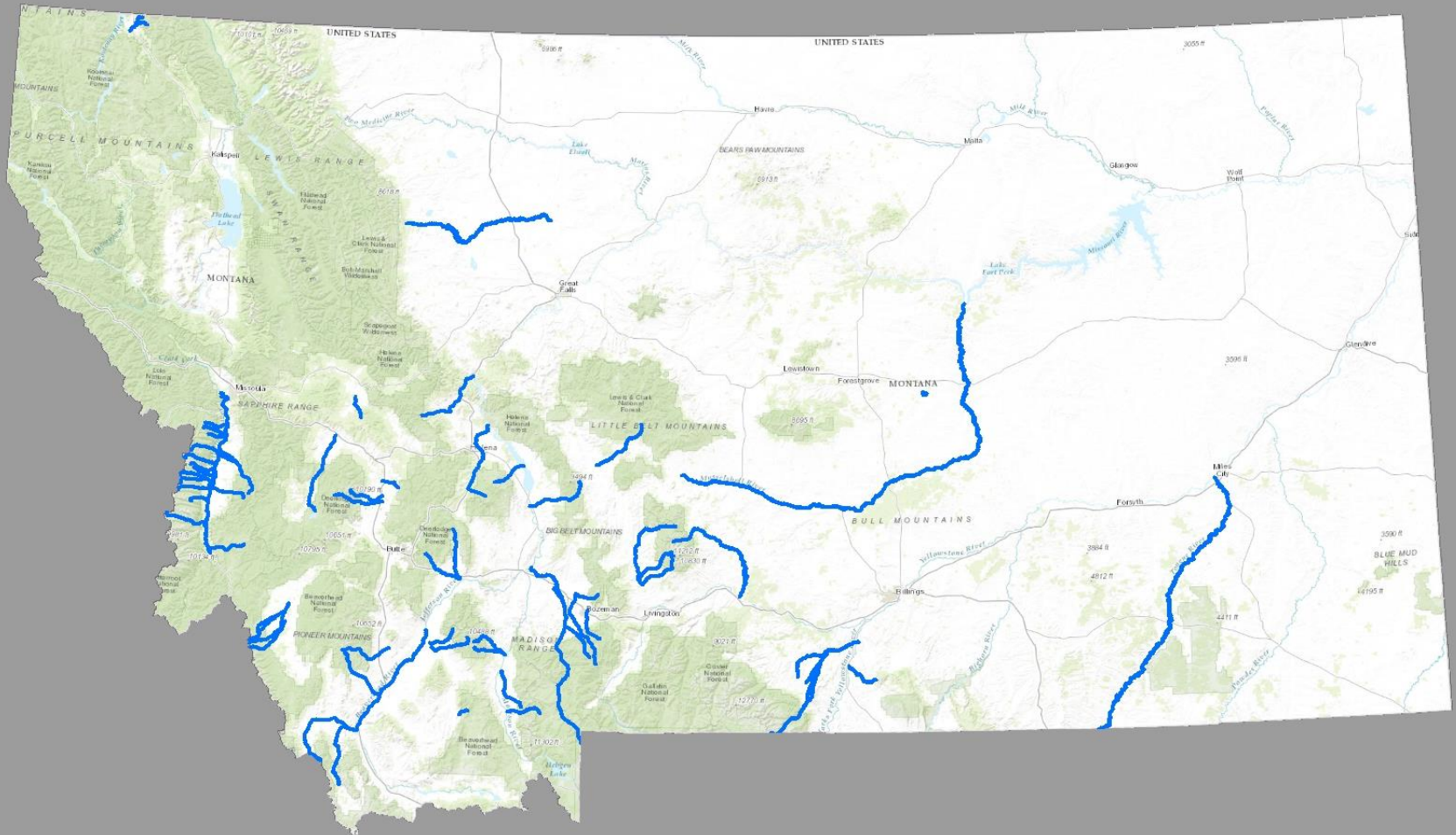


Typical Water Commissioner: local, agriculture background, water user (appx. 50%), has multiple jobs, hands-on, communication skills, from 0-20 years experience.





# Sources With Active Water Commissioners



2016/2017 Appointees: 70 Statewide



# What are DNRC's responsibilities to Water Commissioners?

TITLE 85. WATER USE  
CHAPTER 5. WATER COMMISSIONERS AND WATER MEDIATORS  
Part 1. Appointment and Duties

MCA 85-5-111

## Water Commissioner And Mediator Education

**85-5-111. Water commissioner and mediator education.** (1) The department of natural resources and conservation, in cooperation with the Montana supreme court, the Montana water courts, the district courts of Montana, the Montana university system, and other appropriate state and federal agencies, shall develop an educational program for water commissioners and mediators that includes:

- (a) an annual seminar on commissioner and mediator duties, mediation techniques, and water measuring techniques;
  - (b) preparation and, as necessary, revision of a water commissioner and mediator manual; and
  - (c) an outreach program that identifies persons who might serve as water commissioners or mediators.
- (2) Unless a district court judge having jurisdiction determines otherwise, a water commissioner appointed pursuant to **85-5-101** shall complete at least one educational program as provided in subsection (1) prior to administering water.

**History:** En. Sec. 2, Ch. 625, L. 1989; amd. Sec. 1, Ch. 118, L. 2017.

To provide training  
for Water Commissioners





# Water Commissioner Appointment

- Petition (15%)

*(“owners of at least 15% of water rights and flow rate” MCA 85-5-101)*

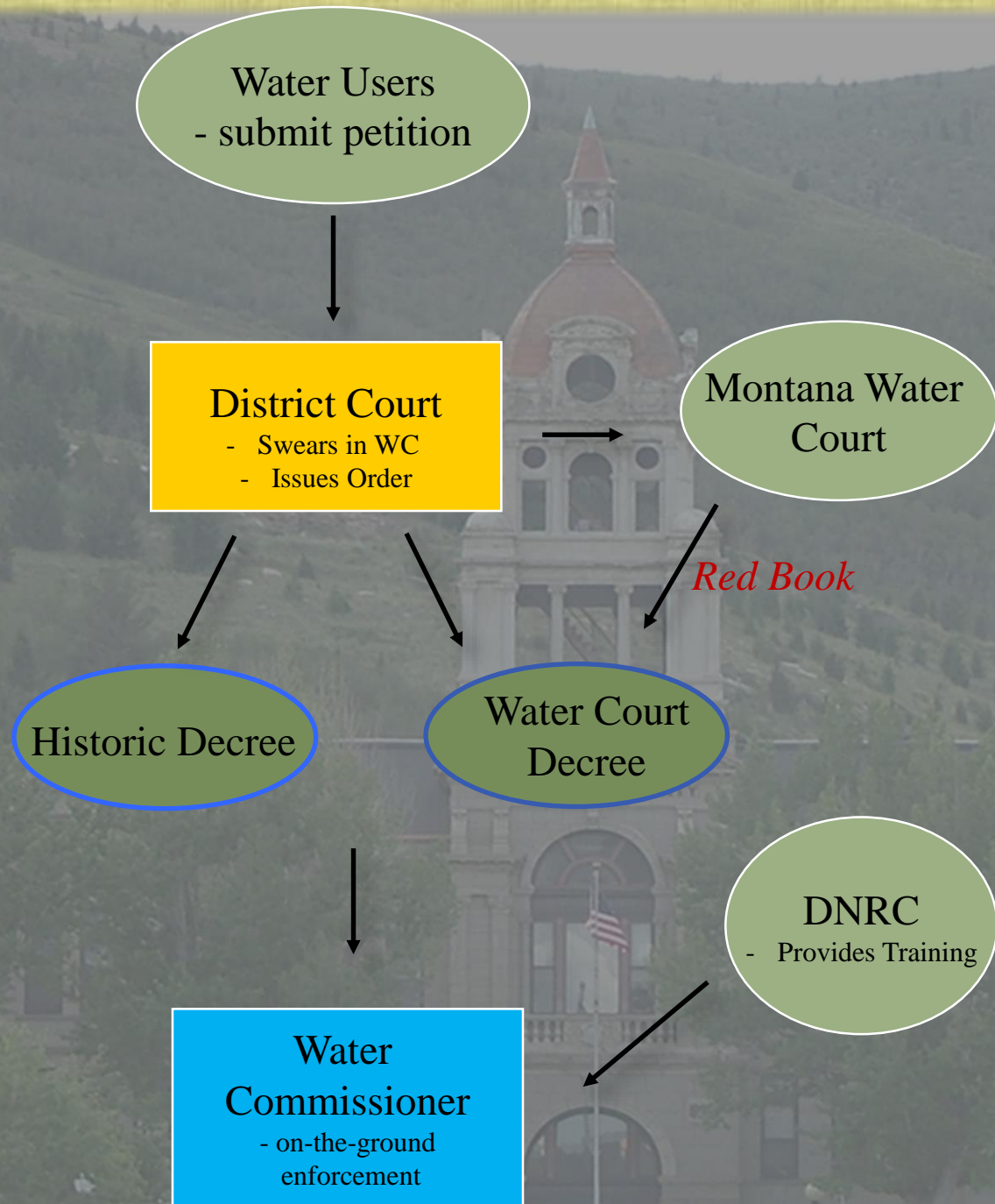
- Order

- Oath of Office

- Bond









# District Court Decree vs. Water Court Decree

*(historical decrees)*

- Typically includes all water rights dated before Decree Issued
- Does not reflect newer water rights, permits, or changes
- Does not include ownership changes

## vs. Water Court Decree

- Typically includes all water rights, permits, changes in appropriation, and is updated annually.

[illegible]

2014 Priority Date Index - Shields River Enforcement Area																	
Enforceable Priority Date	Water Right #	Owner	Type	Use	Acres	Pod ID	Means	Qtr Sec	Section	Rge	Source	Enf #	Diversion Name	From - To	Cfs	Total Flow	
18800601	43A W 11572 00	PORCUPINE CREEK RANCH INC	USE	ST	1	LS	NSW	34	5N0E		SHIELDS RIVER	LS010	LS010	01 01 12 31		0.00	
18830415	43A W 137659 00	MONTANA, STATE OF BOARD OF LAND COMMISSIONERS	USE	ST	1	DT	NWSENE	25	5N0E		SHIELDS RIVER	018	BECKER DITCH	01 01 12 31		0.00	
18830425	43A W 193075 00	BRIGHT, GORDON L	DECR	IR	30.8	1	HG	SENWSW	9	4N0E		SHIELDS RIVER	012	BIG CANAL	05 01 10 04	0.43	0.43
18830425		BRIGHT, JACQUELINE J	DECR	IR	30.8	1	HG	SENWSW	9	4N0E		SHIELDS RIVER	012	BIG CANAL	05 01 10 04		0.43
18830425	43A W 31162 00	ADAMS, DIRK S	DECR	IR	104	1*	HG		4	4N0E		SHIELDS RIVER	012	BIG CANAL	05 15 10 19	3.33	3.76
18830425		ADAMS, DIRK S	DECR	IR	104	2*	HG	NNWNW	3	4N0E		SHIELDS RIVER	014P	ADAMS PUMP SITE	05 15 10 19		3.76
18830425	43A W 33140 00	ADAMS, DIRK S	DECR	ST	1	LS	SESW	16	4N0E		SHIELDS RIVER	LS006	LS006	01 01 12 31		3.76	
18830610	43A W 113381 00	ADAMS, ANITA L	DECR	IR	212	1*	HG	SWSWSE	4	4N0E		SHIELDS RIVER	011	UPPER SWANDAL DITCH	04 15 10 31	1.69	5.45
18830610		ADAMS, ANITA L	DECR	IR	212	2*	HG	SESENN	9	4N0E		SHIELDS RIVER	010	MIDDLE SWANDAL DITCH	04 15 10 31		5.45
18830610		ADAMS, ANITA L	DECR	IR	212	3*	HG	SENWSE	9	4N0E		SHIELDS RIVER	009	LOWER SWANDAL DITCH	04 15 10 31		5.45
18830610		ADAMS, DIRK S	DECR	IR	212	1*	HG	SWSWSE	4	4N0E		SHIELDS RIVER	011	UPPER SWANDAL DITCH	04 15 10 31		5.45
18830610		ADAMS, DIRK S	DECR	IR	212	2*	HG	SESENN	9	4N0E		SHIELDS RIVER	010	MIDDLE SWANDAL DITCH	04 15 10 31		5.45
18830610		ADAMS, DIRK S	DECR	IR	212	3*	HG	SENWSE	9	4N0E		SHIELDS RIVER	009	LOWER SWANDAL DITCH	04 15 10 31		5.45
18830610	43A W 11582 00	PORCUPINE CREEK RANCH INC	DECR	IR	425	1	HG	NWSENE	25	5N0E		SHIELDS RIVER	018	BECKER DITCH	05 15 09 19	0.56	6.01
18830610	43A W 191857 00	ADAMS, ANITA L	USE	ST	1	DT	SWSENE	4	4N0E		SHIELDS RIVER	011	UPPER SWANDAL DITCH	01 01 12 31		6.01	
18830610		ADAMS, ANITA L	USE	ST	2	DT	SESENN	9	4N0E		SHIELDS RIVER	010	MIDDLE SWANDAL DITCH	01 01 12 31		6.01	
18830610		ADAMS, ANITA L	USE	ST	3	DT	SENWSE	9	4N0E		SHIELDS RIVER	009	LOWER SWANDAL DITCH	01 01 12 31		6.01	

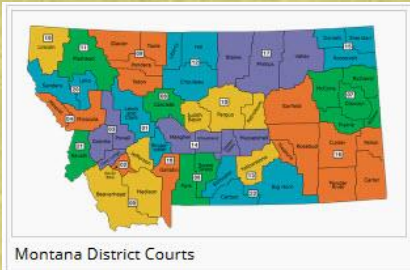
Tuesday, March 11, 2014  
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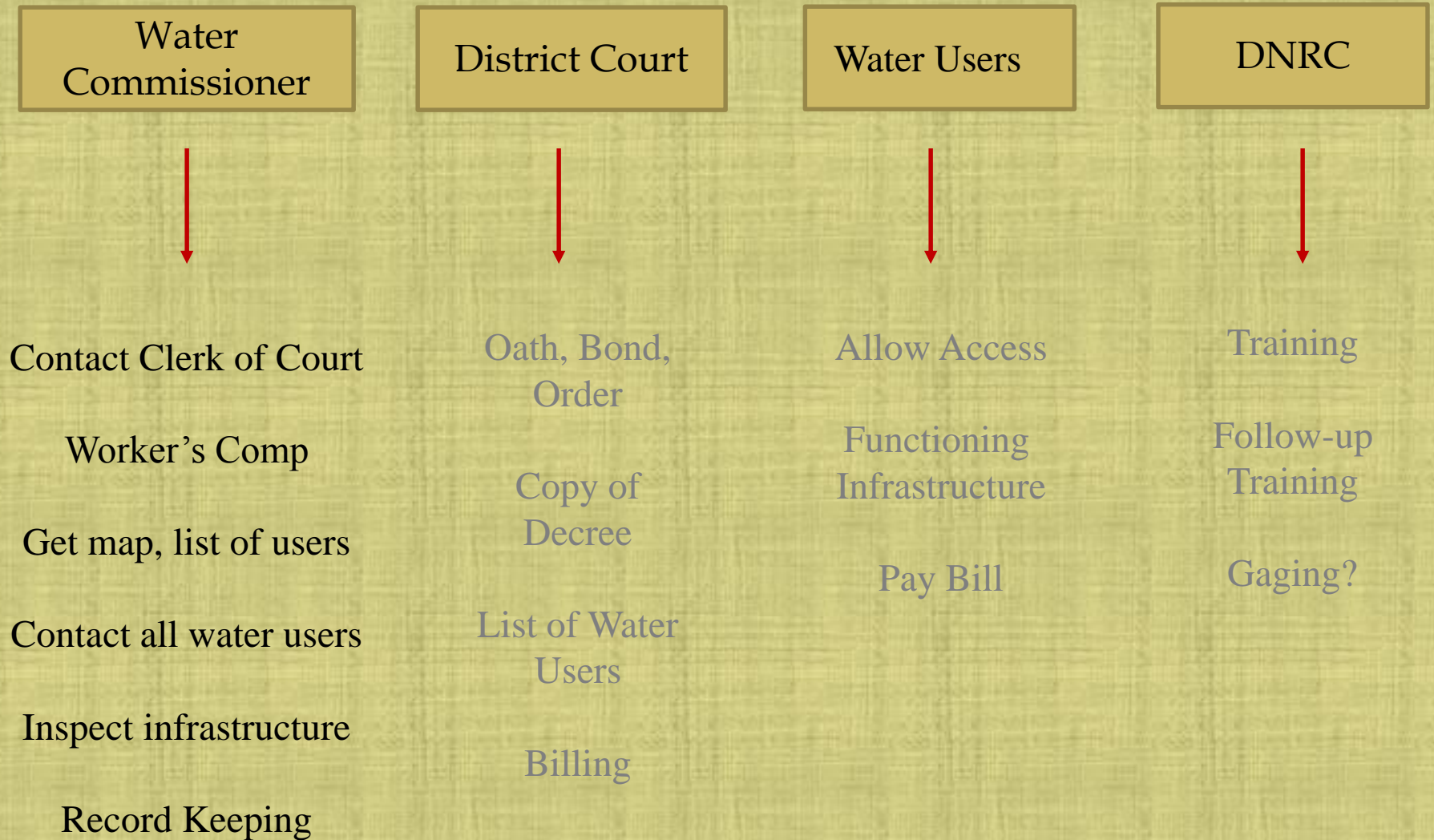
# Newly Appointed Water Commissioner

now what??



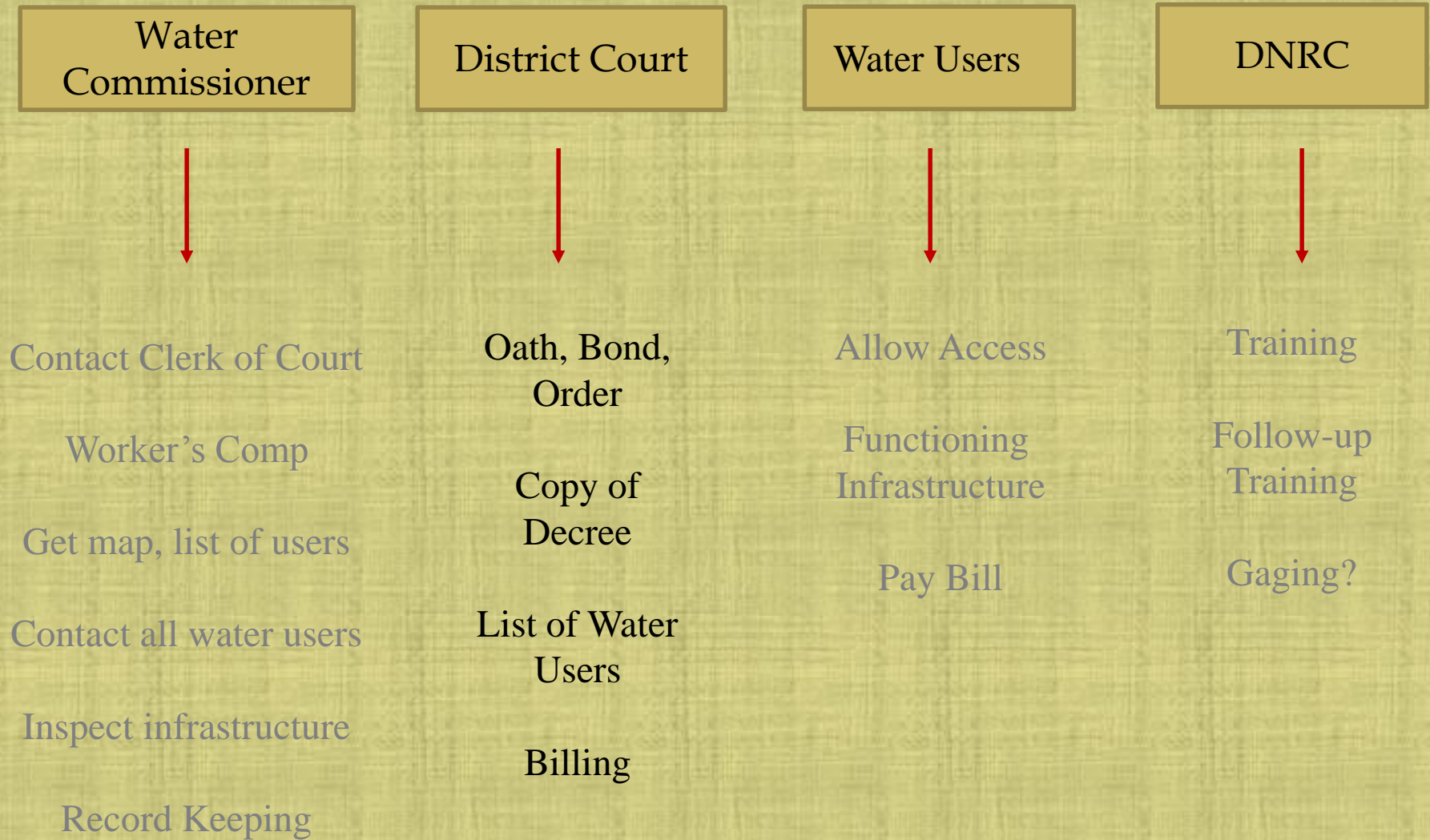


# Once Appointed -- Initial Responsibilities



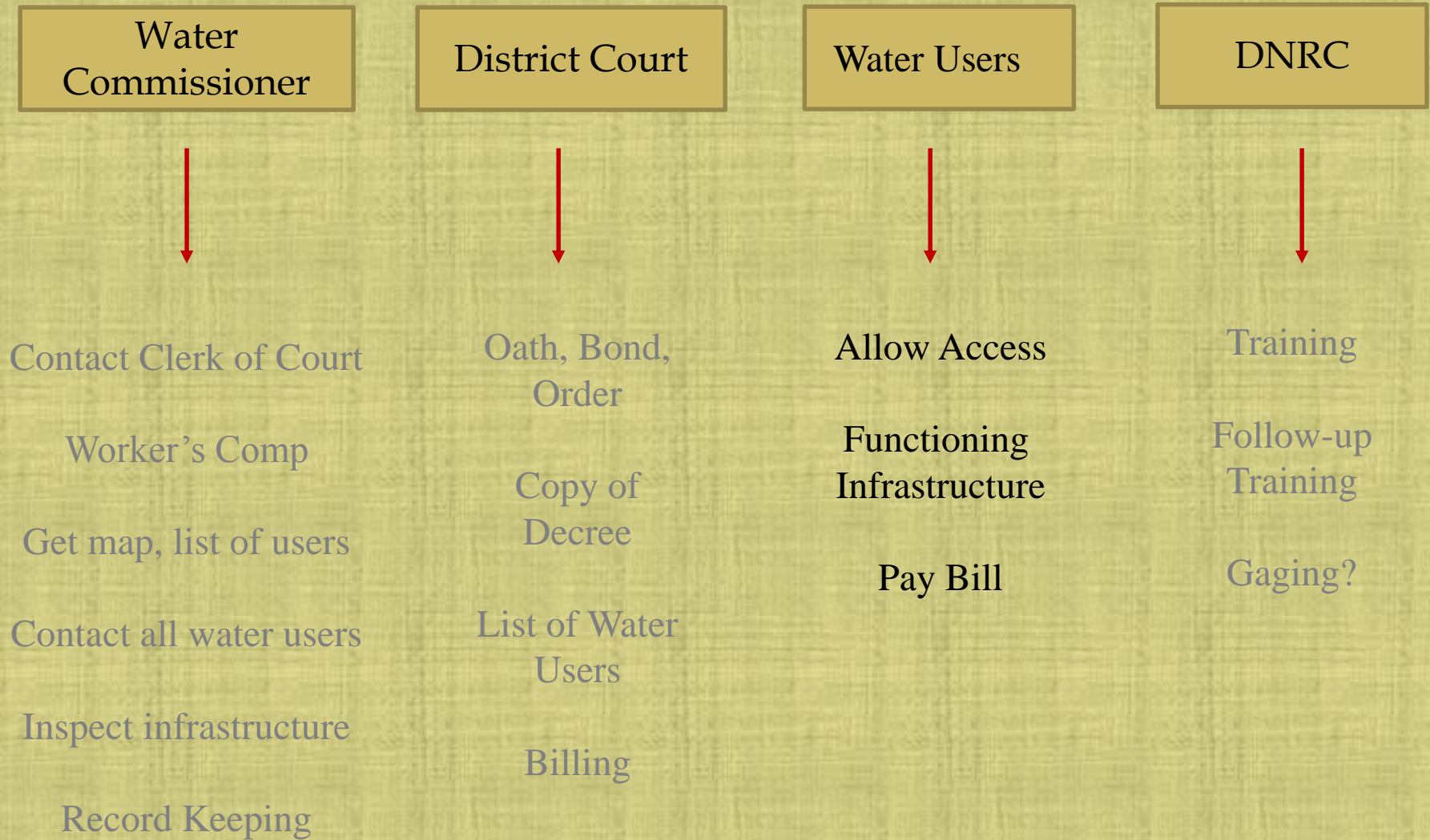


# Initial Responsibilities



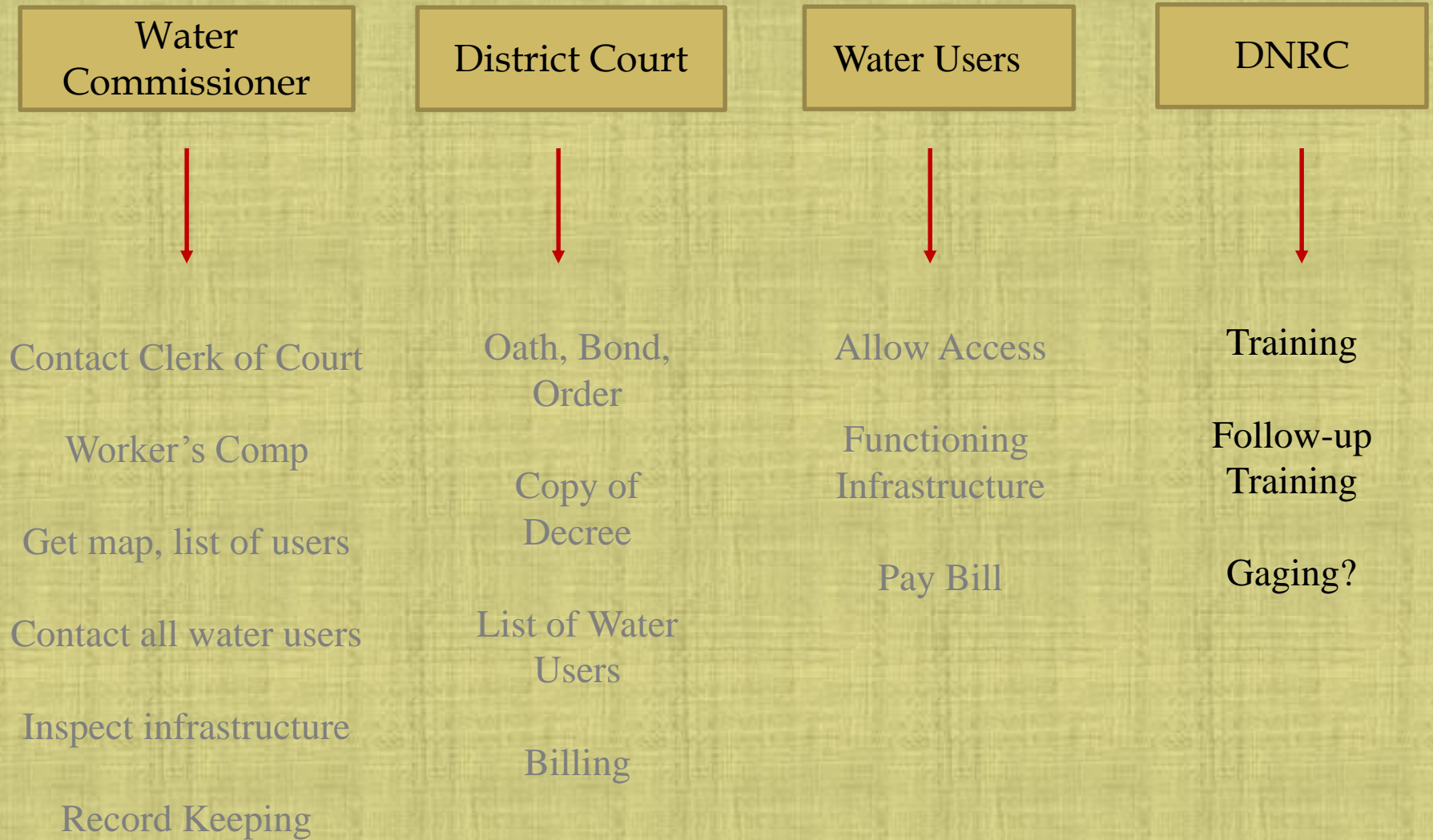


# Initial Responsibilities





# Initial Responsibilities





# What is the District Court's Responsibility to Water Commissioners

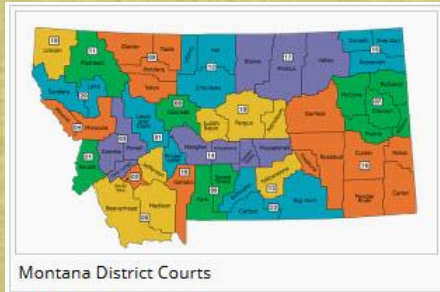
## District Judge



- 1) Appoint Commissioner (MCA 85-5-101)
- 2) Issue Order setting terms of appointment  
(salary, term of office, recording schedule, other  
authorities) (MCA 85-5-101 to 108)
- 3) Address Dissatisfied Water User complaint  
(MCA 85-5-301)



# What is the District Court's Responsibility to Water Commissioners



## Clerk of Court

- 1) Oath and Bond (MCA 85-5-103)
- 2) File Water Commissioner's daily record of water distributed (MCA 85-5-107)
- 3) Notify each water user of Water Commissioner bill (MCA 85-5-204)
- 4) Other: Copy of Decree, List of Water Users (not statutory)





# Why is filing Water Commissioner records important?

- 1) It's the Law
- 2) Provides accountability/transparency of water commissioner.
- 3) Provides a public record of water distribution for water user's, general public, government agencies, etc.
- 4) May preclude a Dissatisfied Water User's complaint
- 5) It's how the WC gets paid.



# \$\$\$ Payment

- Proportionate (mileage, training, worker's comp, ect)
- May receive up to 80% money up front.
- Water Commissioner is paid directly through Clerk of Courts office
- If user does not pay, water can be shut off (MCA 85-5-206)





# Daily Record of Water Distribution

Daily allotment (inches)

Payment (wage and mileage)

1

MONTANA FIFTH JUDICIAL DISTRICT COURT, BEAVERHEAD COUNTY  
REPORT OF WATER COMMISSIONER

Distributing the waters of ROCK CREEK from MAY 17-06 to JULY 19-06

DATE	MILES	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches
JUN 17	102	PAPER WORK										
JUN 20	58	CHALK OUT										
JUN 21	58	336	484		185	92	25					
JUN 22	58	336	484		185	92	25					199
JUN 23	58	336	484		185	92	25					199
JUN 24	58	336	484		185	92	25					199
JUN 25	58	336	484		185	92	25					199
JUN 26	58	336	484		185	92	25					199
JUN 27	58	222	513		185		25					124
JUN 28	58	222	513		185		25					0
JUN 29	58	495	513		185		0					
JUN 30	58	495	513		185		0					
JUL 1	58	495	513		185		0					
JUL 2	58	495	513		185		0					
JUL 3	58	495	513		185		0					
JUL 4	58	495	513		185		0					
JUL 5	58	220	480		0							
JUL 6	58	220	480									
JUL 7	58	220	480									
JUL 8	58	220	480									
JUL 9	58	220	480									
JUL 10	58	220	480									
JUL 11	58	180	320									
JUL 12	58	180	320									
JUL 13	58	180	320									
JUL 14	58	180	320									
JUL 15	58	180	320									
JUL 16	58	180	320									
JUL 17	58	119	194									
JUL 18	58	119	194									
JUL 19	58	119	194									
TOTAL												

Commissioner expenses:

Daily wage: \$ 75.00 per day for 13 days.....\$ 975.00

Mileage: \$ 0.45 per mile for 798 miles.....\$ 359.10

Workers Compensation insurance, payment made during current month.....\$

Total water commissioner expense for the month.....\$

SUBMITTED this 28 day of JULY, 2006

DAYS LISTED WITH MILEAGE ARE DAYS WORKED

Water Commissioner



July  
2017

## Water Commissioner Daily Reporting & Expenses

Judicial District #: *Enter #*  
 County: *Enter County*  
 Clerk of Court: *Enter Court*  
 Water Commissioner: *Enter Commissioner Name*  
 Water Body: *Enter Water Body Name*

## Water Commissioner Expenses

Water User	Smith, Jerry	Smith, Doug	Big Ranch	Smith, Jerry	Williams, Eric	Ellis, Braeden	A	B	C	D	E	F	G	H
Ditch	Big	Middle	Small	Pasture	Farm1	Farm2	X	X	X	X	X	X	X	X
↓	↓	↓	↓	↓	↓	↓								
DATE	MILES	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches
7/1		400	100	150	80	80	160	0	0	0	0	0	0	0
7/2	100	400	100	150	80	80	160	0	0	0	0	0	0	0
7/3	100	400	100	150	80	80	160	0	0	0	0	0	0	0
7/4		400	100	150	80	80	160	0	0	0	0	0	0	0
7/5		400	100	150	80	80	160	0	0	0	0	0	0	0
7/6	50	400	100	150	80	80	160	0	0	0	0	0	0	0
7/7	50	400	100	150	80	80	160	0	0	0	0	0	0	0
7/8		400	100	150	80	80	160	0	0	0	0	0	0	0
7/9		400	100	150	80	80	160	0	0	0	0	0	0	0
7/10	75	400	100	150	80	80	160	0	0	0	0	0	0	0
7/11	75	400	100	150	80	80	160	0	0	0	0	0	0	0
7/12		400	100	150	80	80	160	0	0	0	0	0	0	0
7/13		400	100	150	80	80	160	0	0	0	0	0	0	0
7/14	100	400	100	150	40	60	100	0	0	0	0	0	0	0
7/15	100	400	100	150	40	60	100	0	0	0	0	0	0	0
7/16		400	100	150	40	60	100	0	0	0	0	0	0	0
7/17		400	100	150	40	60	100	0	0	0	0	0	0	0
7/18	50	400	100	150	40	60	100	0	0	0	0	0	0	0
7/19	50	400	100	150	40	60	100	0	0	0	0	0	0	0
7/20		400	100	150	40	60	100	0	0	0	0	0	0	0
7/21		400	100	150	40	60	100	0	0	0	0	0	0	0
7/22	75	400	100	150	40	60	100	0	0	0	0	0	0	0
7/23	75	400	100	150	40	60	100	0	0	0	0	0	0	0
7/24		400	100	150	40	0	0	0	0	0	0	0	0	0
7/25		400	100	150	40	0	0	0	0	0	0	0	0	0
7/26	100	400	100	150	40	0	0	0	0	0	0	0	0	0
7/27	100	400	100	150	40	0	0	0	0	0	0	0	0	0
7/28		400	100	150	40	0	0	0	0	0	0	0	0	0
7/29		400	100	150	40	0	0	0	0	0	0	0	0	0
7/30		400	100	150	40	0	0	0	0	0	0	0	0	0
7/31		400	100	150	40	0	0	0	0	0	0	0	0	0
TOTAL	1100	12400	3100	4650	1760	1640	3080	0	0	0	0	0	0	0

Daily Wage:	\$100 per day	14 days	\$1,400
Mileage:	\$0.50 per mile	1100 miles	\$550
Workers Comp:	200 per month		\$200
Other Expenses (list):	phone, log books		\$100
Total Commissioner Expenses for the month			\$ 2250

Form FIELD FORMS

JULY EXAMPLE

BILLING SUMMARY



## Water Commissioners Should:

- Measure and Distribute water based on priority and decree.
- Inspect Headgates and Measuring devices.
- Record daily distribution.
- Shut water off based on:
  - > priority
  - > lack of payment
  - > non-cooperation regarding infrastructure
- Lock headgates if it is being tampered with (site-specific)

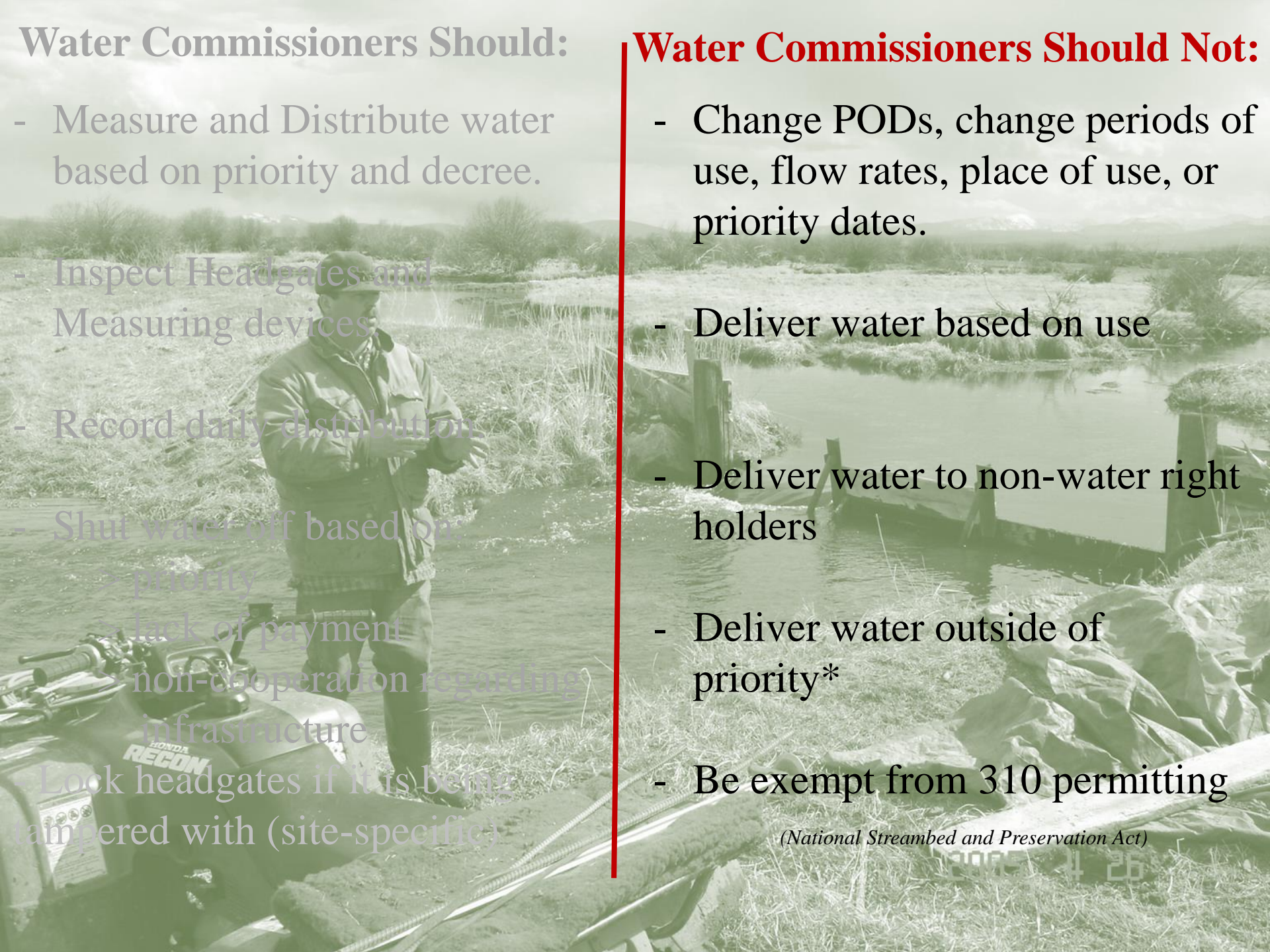
## Water Commissioners Should Not:

- Change PODs, change periods of use, flow rates, place of use, or priority dates.
- Deliver water based on use
- Deliver water to non-water right holders
- Deliver water outside of priority\*
- Be exempt from 310 permitting

*(National Antidegradation and Preservation Act)*

2005 4 26





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*(National Streambed and Preservation Act)*

2005-4-26





## Interference With Actions of a Commissioner

MCA 85-5-406. A person opening or closing a headgate after being set by the commissioner or who in any manner interferes with the commissioner in the discharge of the commissioner's duties is guilty of contempt of court and may be proceeded against for contempt of court as provided in contempt cases.





# Encourage Communication

Water User and Water Commissioner

Water Commissioner and District Court



Issues that require  
Communication include:

- New WC Introduction
- Turning on/off
- Headgate Adjustment
- Access
- Repair/Replacement
- Payment Issues



## **Rights and Duties of Water Users:**

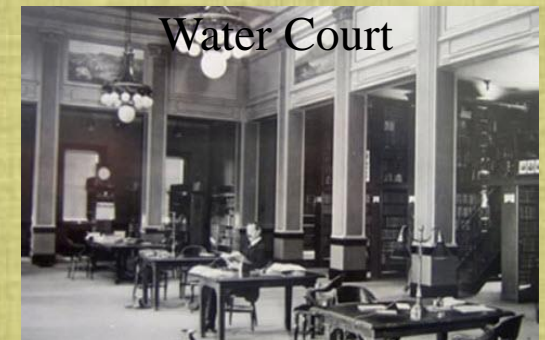
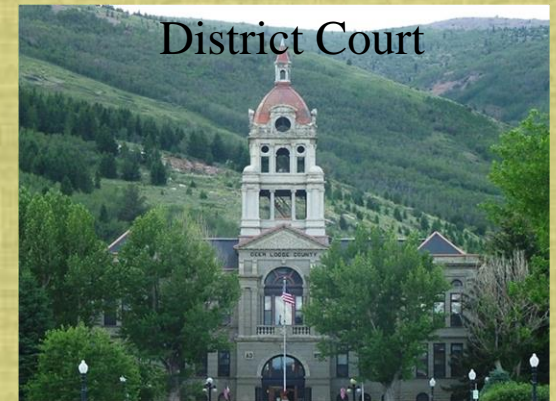
- Required to have and pay for suitable and functioning headgate and measuring device.
- Required to pay for water delivered.
- Required to allow access to PODs.
- May file dissatisfied user complaint with judge.
- Failure of Water Commissioner to perform duty is Contempt of Court.





## Steep Learning Curve

Requires Patience of both Water Commissioner and Water User





# Water Commissioner Training

Title 85-5  
Montana Code Annotated

Helena, Montana  
April 4-5, 2018

Department of Natural Resources  
and Conservation (DNRC)



Training is FREE







**Water Adjudication**

**Water Management**

[State Water Plan](#)

[Regional River Basin Information](#)

[Programs, Projects, and Studies](#)

[Reports & Technical Information](#)

[Training & Education](#)

[Water Commissioner Information](#)

[Transboundary Water Information](#)

[Water Compact Information](#)

[St. Mary Rehabilitation Project](#)

**Water Operations**

**Water Projects**

**Water Rights Bureau**

**Drought Management**

## Water Commissioner Information

DNRC has developed an educational program for water commissioners that provides annual training on commissioner responsibilities and water measurement techniques. This free training is available to anyone interested in the accurate measurement and distribution of water in Montana including state and federal water managers, water commissioners, ditch riders and dam tenders, District Court and Water Court personnel.

**Training Materials**



**Decree Status**



**FAQs**



**Streamflow and  
Water Right Data**



**Forecasting**



**Active Water  
Commissioners**



**District Court  
Information**



**Water Commissioner  
Law**



**Glossary**



## Educational Materials

### Water Rights and Historical Beneficial Use

- [Water Rights and Historical Beneficial Use \(PDF\)](#)
- [Water Rights and Historical Beneficial Use \(Video\)](#)

### Facts About Montana's Water

1. [Who Owns the Water in Montana?](#)
2. [Who Manages Montana's Water?](#)
3. [How Much Water is There and How is it Used?](#)
4. [Can Groundwater Meet the Demand for New Water Uses in Montana?](#)
5. [What is the History of Water Planning in Montana?](#)
6. [How is Water Managed in the Event of Water Shortages?](#)
7. [What is Water Rights Adjudication?](#)
8. [How Are Instream Flows Protected?](#)
9. [What Are Federal Reserved Water Rights?](#)
10. [Water Fact Sheets Terminology](#)

### Guide to Montana Water Management

[Who Does What with Montana's Water Resources?](#)



## Divisions

Board of Oil & Gas  
Conservation and Resource Development

## About

DNRC's Mission  
Administrative Rules

## Follow Us





# Water Measurement and Distribution



Flow Measurement Basics – unit conversion

Distribution - day to day operation

Water Measurement Devices



# Water Distribution

- Priority and Instream Flow
- Decreed vs. Stored Waters
- Understanding hydrology of system





Determine how much  
water to distribute to  
each of the 6 water rights

Water Right #1

40 CFS

6-1-1980



Water Right #2

20 CFS

6-1-1980



Water Right #3

30 CFS

5-25-1900



25  
CFS

Water Right #4

50 CFS

3-1-1880



Water Right #5

20 CFS

7-1-1882



FWP Instream Water

Right #6

20 CFS

5-31-1980



---Answers---

#1=	CFS
#2=	CFS
#3=	CFS
#4=	CFS
#5=	CFS
#6=	CFS

10 CFS

100 CFS



Determine how much  
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Water Right #1

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6-1-1980



Water Right #2

20 CFS

6-1-1980



Water Right #3

30 CFS

5-25-1900



Water Right #4

50 CFS

3-1-1880



Water Right #5

20 CFS

7-1-1882



FWP Instream Water

Right #6

20 CFS

5-31-1980



100 CFS

25 CFS

10 CFS

---Answers---

#1= 10 CFS

#2= 5 CFS

#3= 30 CFS

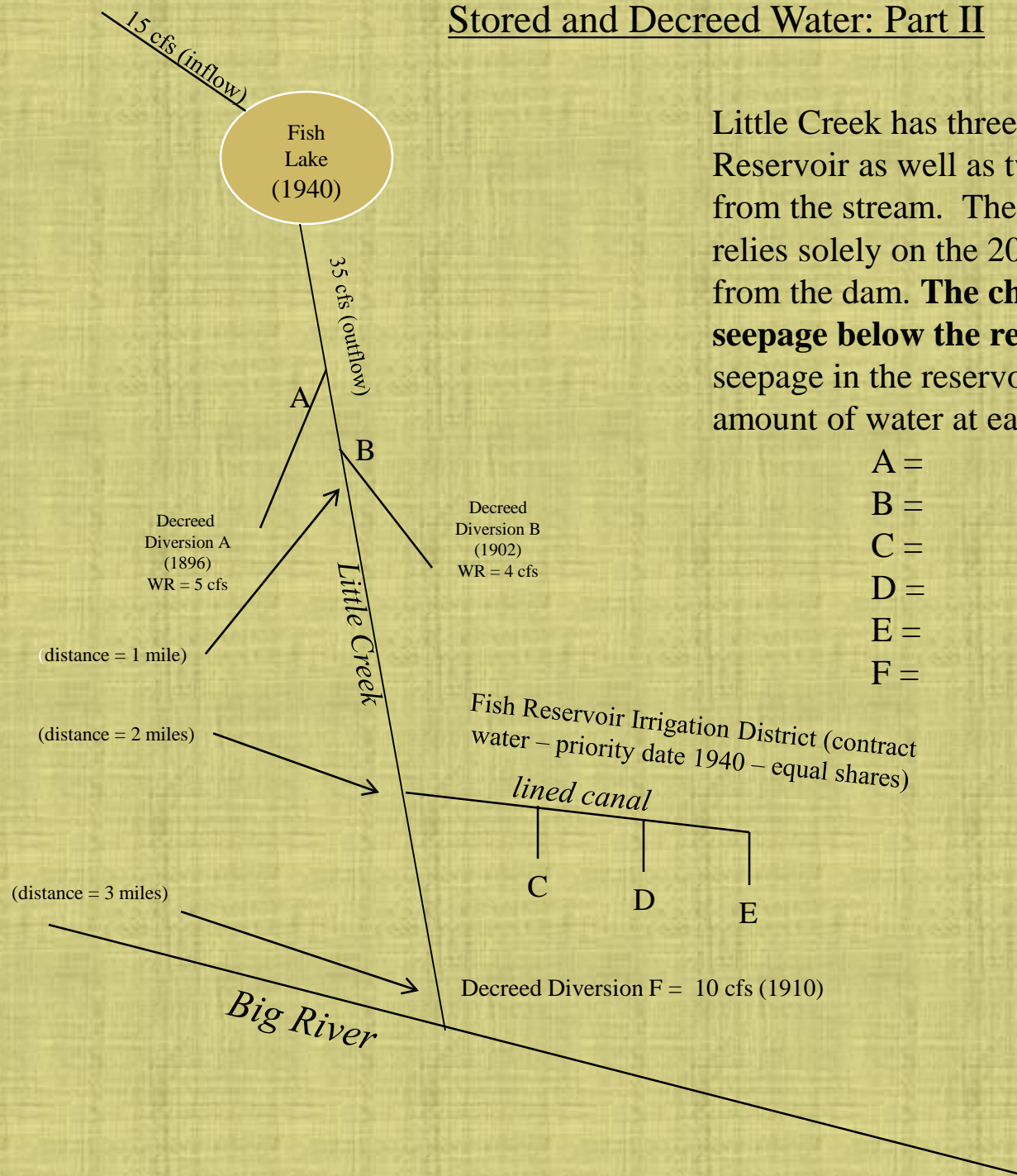
#4= 50 CFS

#5= 20 CFS

#6= 20 CFS



## Stored and Decreed Water: Part II



Little Creek has three water right contracts from Fish Reservoir as well as two decreed water rights directly from the stream. The Fish Lake Irrigation District relies solely on the 20 cfs of stored water released from the dam. **The channel loses 1 cfs/mile to seepage below the reservoir.** If evaporation and seepage in the reservoir are negligible, determine the amount of water at each location.

A =

B =

C =

D =

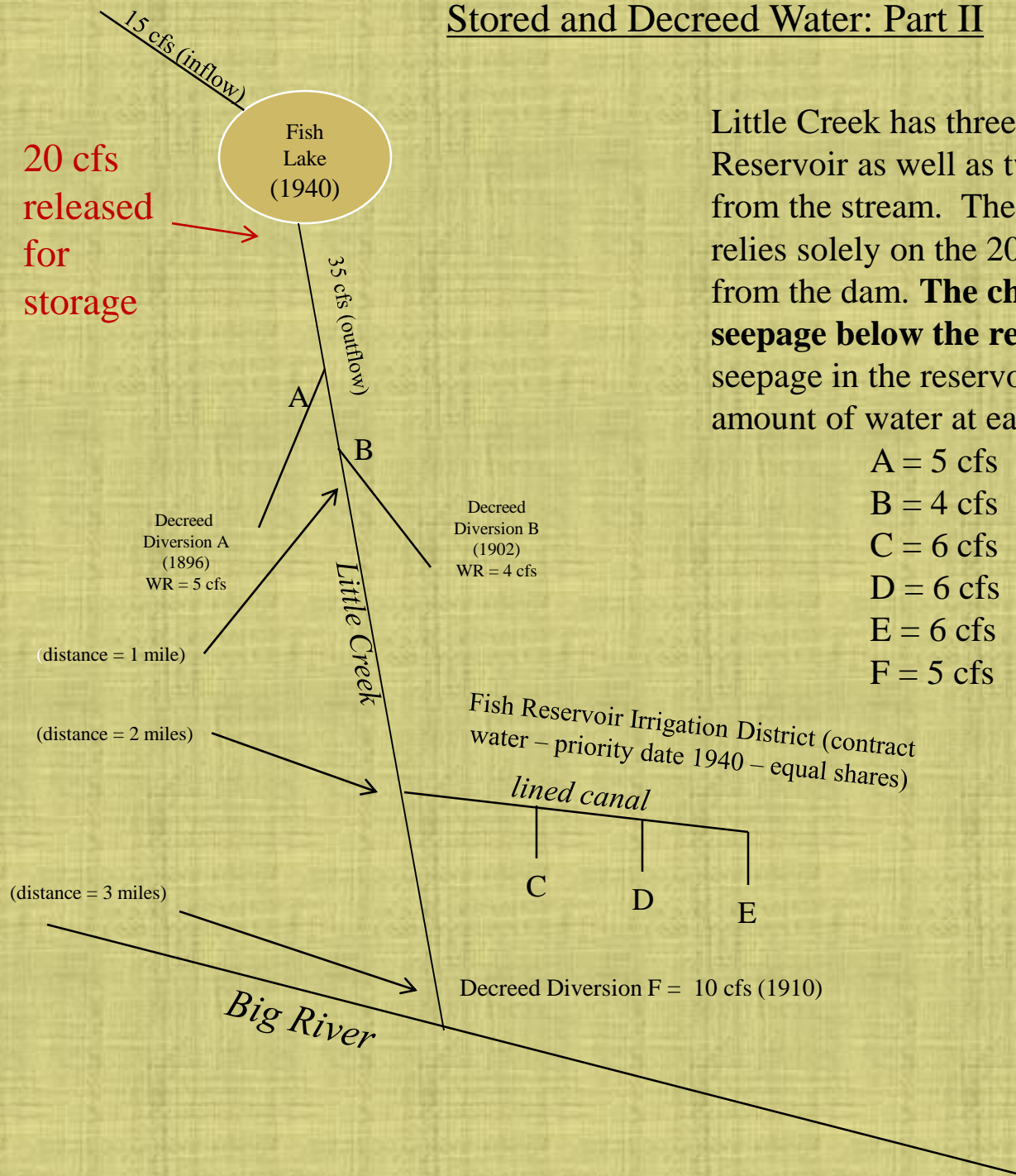
E =

F =



## Stored and Decreed Water: Part II

20 cfs  
released  
for  
storage



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A = 5 cfs

B = 4 cfs

C = 6 cfs

D = 6 cfs

E = 6 cfs

F = 5 cfs

} stored water gets 18 cfs

# Flow Measurement Basics

- Flow Rate or discharge is the volume of water passing a flow section per unit time
- Standard units of *cubic feet per second* (cfs)

1 cfs is equivalent to:

40 miner's inches in Montana

448.8 gallons per minute (gpm)

1.98 ac-ft per day





MCA 85-5-302



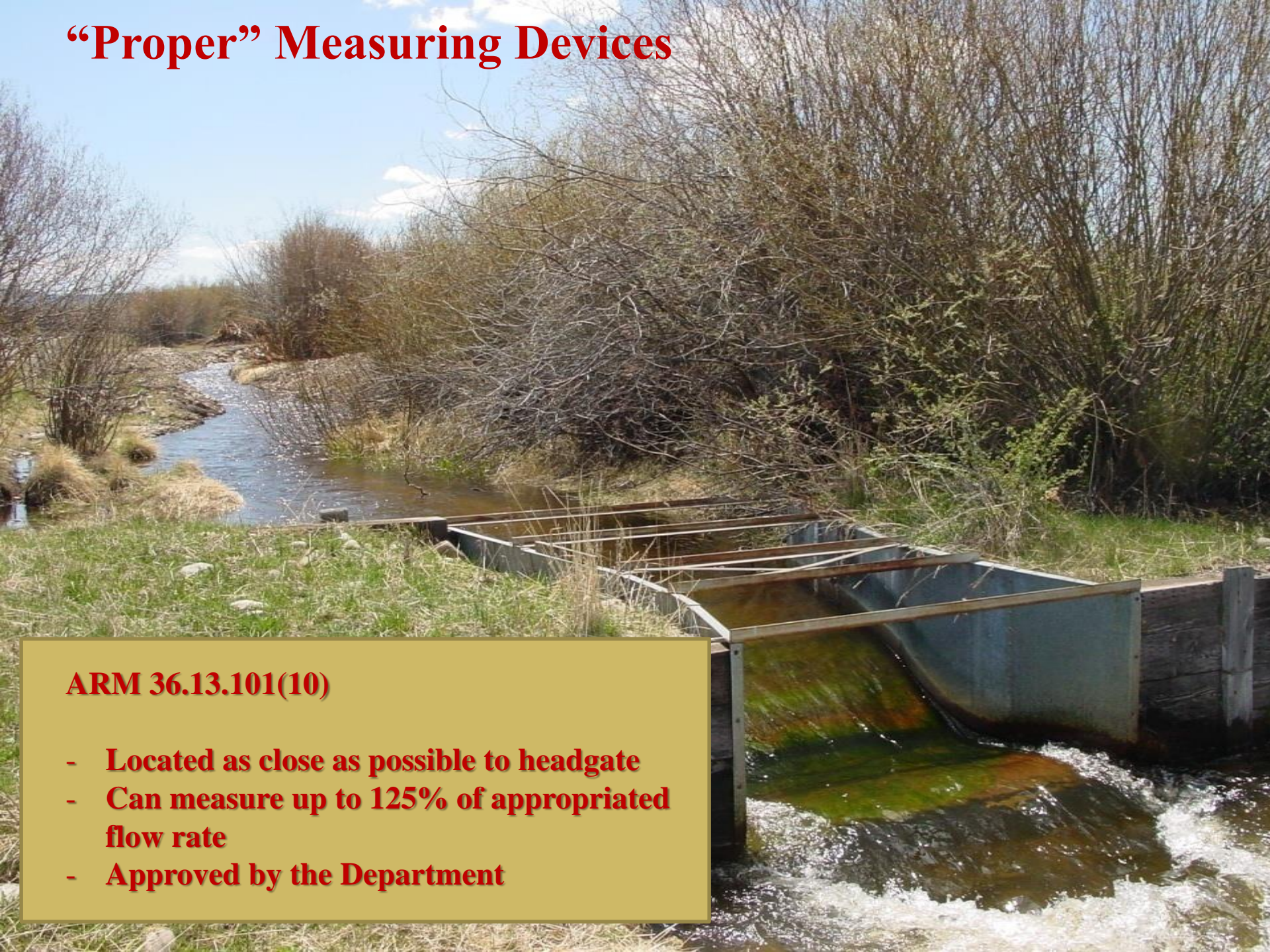
*....All persons using water from any stream or ditch whereon a water commissioner is appointed are required to have suitable headgates at the point where the ditch taps a stream and shall also, at some suitable place on the ditch and as near the headgate as practicable, place and maintain a proper measuring box, weir, or other appliance for the measurement of the waters flowing in the ditch.*



# **“Proper” Measuring Devices**

## **ARM 36.13.101(10)**

- **Located as close as possible to headgate**
- **Can measure up to 125% of appropriated flow rate**
- **Approved by the Department**





# Identifying Flume or Weir Size

Parshall, Montana, and Cutthroat flume size delineations are based on throat widths. Ramp flume sizes are based on maximum flow capacity.



2' cutthroat flume



4 cfs ramp flume



2' Montana flume



12' parshall flume

Rectangular and Cipoletti Weir sizes are delineated based on notch width. V-notch weirs are all the same and therefore have no specific size delineation.



4' cipoletti weir



3' rectangular weir



# Reading Flumes and Weirs

(1) Determine size and type of Flume or weir. Ex. 2-ft. Parshall Flume



(2) Determine if device is properly functioning. Check for free flow and level (lengthwise and crosswise).



(3) Take staff gage reading. In this example, stage = 1.0

(4) Using staff gage reading, look up discharge in appropriate table. Match the stage reading to the appropriate flume or weir size (based on throat or notch width). In this example,  $Q = 8.0$  cfs.

**Table A8-12 [continued].** Free-flow discharges in  $\text{ft}^3/\text{sec}$  through 1- to 8-foot Parshall flumes. Discharges for 2- to 8-ft flumes computed from the formula  $Q = 4.00Wh_a^{1.522(W \cdot 0.026)^{-1.55}}$ . Discharges for 1-ft flume computed from the formula  $Q = 3.95h_a^{1.55}$ .

Upper Head $h_a$ , ft	Discharge for flumes of various throat widths, $W$							
	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
1.00	3.95	8.00	12.0	16.0	20.0	24.0	28.0	32.0
1.01	4.01	8.12	12.2	16.3	20.3	24.4	28.4	32.5
1.02	4.07	8.25	12.4	16.5	20.6	24.6	28.6	33.0
1.03	4.14	8.37	12.6	16.8	21.0	25.2	29.4	33.6
1.04	4.20	8.50	12.8	17.0	21.3	25.5	29.8	34.1
1.05	4.26	8.63	13.0	17.3	21.6	25.9	30.3	34.6
1.06	4.32	8.76	13.1	17.5	21.9	26.3	30.7	35.1
1.07	4.39	8.88	13.3	17.8	22.3	26.7	31.2	35.7
1.08	4.45	9.01	13.5	18.1	22.6	27.1	31.7	36.2
1.09	4.51	9.14	13.7	18.3	22.9	27.5	32.1	36.8
1.10	4.58	9.27	13.9	18.6	23.3	27.9	32.6	37.3
1.11	4.64	9.40	14.1	18.9	23.6	28.3	33.1	37.8
1.12	4.71	9.54	14.3	19.1	23.9	28.8	33.6	38.4
1.13	4.77	9.67	14.5	19.4	24.3	29.2	34.1	38.9
1.14	4.84	9.80	14.7	19.7	24.6	29.6	34.5	39.5
1.15	4.91	9.93	14.9	19.9	25.0	30.0	35.0	40.1
1.16	4.97	10.1	15.1	20.2	25.3	30.4	35.5	40.6
1.17	5.04	10.2	15.3	20.5	25.7	30.8	36.0	41.2
1.18	5.11	10.3	15.6	20.8	26.0	31.2	36.5	41.7
1.19	5.17	10.5	15.8	21.1	26.4	31.7	37.0	42.3
1.20	5.24	10.6	16.0	21.3	26.7	32.1	37.5	42.9
1.21	5.31	10.7	16.2	21.6	27.1	32.5	38.0	43.5
1.22	5.38	10.9	16.4	21.9	27.4	33.0	38.5	44.0
1.23	5.44	11.0	16.6	22.2	27.8	33.4	39.0	44.6
1.24	5.51	11.2	16.8	22.5	28.1	33.8	39.5	45.2
1.25	5.58	11.3	17.0	22.8	28.5	34.3	40.0	45.8
1.26	5.65	11.4	17.2	23.0	28.9	34.7	40.5	46.4
1.27	5.72	11.6	17.4	23.3	29.2	35.1	41.1	47.0
1.28	5.79	11.7	17.7	23.6	29.6	35.6	41.6	47.6
1.29	5.86	11.9	17.9	23.9	30.0	36.0	42.1	48.2
1.30	5.93	12.0	18.1	24.2	30.3	36.5	42.6	48.8
1.31	6.00	12.2	18.3	24.5	30.7	36.9	43.1	49.4
1.32	6.07	12.3	18.5	24.8	31.1	37.4	43.7	50.0
1.33	6.15	12.4	18.8	25.1	31.4	37.8	44.2	50.6
1.34	6.22	12.6	19.0	25.4	31.8	38.3	44.7	51.2
1.35	6.29	12.7	19.2	25.7	32.2	38.7	45.3	51.8
1.36	6.36	12.9	19.4	26.0	32.6	39.2	45.8	52.4
1.37	6.43	13.0	19.6	26.3	33.0	39.6	46.3	53.1
1.38	6.51	13.2	19.9	26.6	33.3	40.1	46.9	53.7
1.39	6.58	13.3	20.1	26.9	33.7	40.6	47.4	54.3







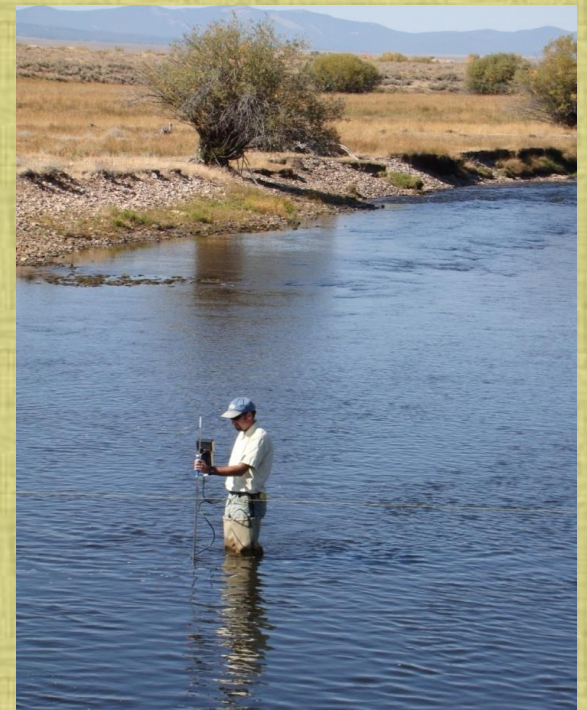
Suitable Headgate??



















Department of Natural Resources & Conservation

Water Resources Division

# Water Commissioner Training Certificate of Attendance

*awarded to*

*March 29-30, 2017*

In recognition of your attendance and participation in the 2017 Water Commissioner  
Training held in Helena, Montana pursuant to §85-5-111, MCA.



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**Jan Langel**  
Division Administrator

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**Mike Roberts**  
Hydrologist - Trainer



The background image shows a wide river flowing through a grassy landscape. In the foreground, a small concrete dam with two spillways is visible, with water cascading over them. To the right, a tall, cylindrical metal water tower stands on a slight rise. The sky is clear and blue.

## Upcoming Water Commissioner Trainings

**March 15**      **Dillon (specialty training)**

**April 4-5**      **Helena**

**Mid-April**      **Hamilton**

**Mid-June**      **Helena**



# Questions??

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